

## EVALUATING SPEECH DIFFICULTIES IN DOWN SYNDROME CHILDREN: SPEECH ASSESSMENT TOOLS FOR INTERDISCIPLINARY CLINICAL PRACTICE

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<https://doi.org/10.5281/zenodo.15401279>

**Annotation.** Down syndrome (DS), resulting from the trisomy of chromosome 21, represents one of the most common genetic causes of intellectual disability, occurring in approximately 1 in 700 live births worldwide. Children with Down syndrome exhibit a distinctive profile of developmental challenges, with speech and language impairments constituting particularly prominent and persistent features of their phenotype. The communication difficulties experienced by these children are characterized by a striking discrepancy between receptive and expressive language abilities, with expressive language typically more severely affected and following an atypical developmental trajectory compared to neurotypical peers.

**Keywords:** Down syndrome, speech disorders, speech assessment card, speech diagnostics, defectology, neurology, interdisciplinary approach, developmental disorders, speech therapy, language development, articulation disorders, early intervention, diagnostic protocols, communication skills, cognitive development.

**The aim of the study** is to examine and evaluate the effectiveness of the "Speech card" as a tool for diagnosing speech disorders in children with Down syndrome in the complex of defectological and neurological observation.

**Research material.** The research material consisted of children with Down syndrome who underwent preventive specialized examinations by neurologists, speech therapists, psychologists, and otolaryngologists at a forum organized by the MESCA Foundation - Switzerland together with doctors from Uzbekistan (September 2024). Children with Down syndrome and their parents were invited to this forum after receiving prior notification and invitation. The total number of participants was 117 children aged from 2 to 15 years; of these, urban children (Samarkand city) comprised 79 children, district children (Samarkand region) 38 children; 62 boys and 55 girls. The examination process of children with Down syndrome took place at the Multidisciplinary Clinic of Samarkand State Medical University, in the department of outpatient functional diagnostics. The inclusion criteria were based on the main principles of the research objective: speech disorder, lack of language skills, division of speech into receptivity and imagery.

**Results of the Research.** Thus, based on the purpose and methods of the study, the indicators in the main group (children with Down syndrome) were as follows: the total number of examined children was 59, 34 boys and 25 girls. All children had common characteristics: communication through gestures, touch (especially noticeable when the child tries to express a request to their mother with a special facial expression), meaning non-verbal communication predominated over verbal. It should be noted that children with Down syndrome characteristically respond to requests-questions with short "yes" or "no" answers,

so-called "black-and-white" thinking, sometimes without understanding the answer (or corresponding question). Such answers without analysis (the so-called dichotomous process) were detected in patients in 73.1% of cases. Additionally, decreased response speed, slowed thinking, and delayed answers to questions (requiring several repetitions in 56% of cases) were observed, consequently demonstrating difficulty in speech fluency, where  $p < 0.001$  compared to the healthy group of children.

**Conclusions:** Thus, the result of a study of children with Down syndrome, the topic of discussion of which was language and speech disorders, indicates a high frequency of the formation of polysyllabic speech compared with children of the same age and gender in a healthy group. In addition, a significant relationship was found between speech skills and some symptoms, such as voice strength, voice timbre, and pronunciation. A correlation has been found between hearing and phonemic hearing with understanding of the surrounding speech and grammatical structure of speech, at the same time, independent speech, imagination, and the use of speech depend little on the emotional perception and impressionable nature of patients, which are caused by cognitive insufficiency and decreased fine motor skills. Therefore, the issue of combined observation of specialists of various profiles, children with Down syndrome, remains important, where the lack of speech development and the conclusion of a speech pathologist is considered a priority as a result of forecasting and optimizing therapy. The use of a "speech card" during the examination and dynamic monitoring of patients with Down syndrome will make it possible to identify long-term projects for older adolescents.

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